intermediate layer is dissolved subsequently, which separates the layer structure from the substrate, and thereby from the layer structure a flexible solar cell is formed.

2. (Amended) Method according to claim 1 wherein the layer structure is formed by a supporting layer and a layer stack.

3. (Amended) Method according to claim 1 wherein the layer structure is formed by a layer stack and that after dissolution of the intermediate layer the layer stack is provided with a supporting layer.

4. (Amended) Method according to claim 1 wherein after dissolution of the intermediate layer the substrate is reused.

5. (Amended) Method according to claim 1 wherein the intermediate layer consists of a material of the group of the alkali-halogenides like NaCl, KCI, NaF or of the group of the IIa-fluorides like BaF_2.

6. (Amended) Method according to claim 1 wherein several combinations of layer stacks with or without separating layers between the layer stacks are deposited one upon the other.

7. (Amended) Application of the method according to claim 1 to produce energy on earth and in space and for consumer applications like pocket calculators and "smart cards".

8. (Amended) Solar cell according to claim 1 consisting of at least one absorber layer of a semiconductor, of at least one window layer of a semiconductor to couple the light in, of at least one at least partially transparent front contact and at least one backcontact, wherein the solar cell contains at least one thin supporting layer and that this supporting layer adjoins to the back contact or is located on the front contact.

9. (Amended) Solar cell according to claim 8 wherein the supporting layer consists of a plastic, preferably a polyimide, or of a metal or ceramic, and that its thickness is 1 - 100 μm, preferably 20 μm.

10. (Amended) Solar cell according to claim 8 wherein the absorber layer consists of a material of the group of I-III-VI compounds of the periodic system, like $CuIn_xSe_y$, $CuIn_xGa_ySe_z$, $CuIn_x,Ga_yS_zSe_u$, with $x,y,z,u \geq 0$, or of the II-VI compounds of the periodic system like CdTe, or III-V compounds of the periodic system like $A1_{1-x-y}Ga_xIn_yAs_{1-u-w}P_uN_w$ with $0 \leq x,y,u,w \leq 1$ or of group IV elements of the periodic system like Si or Ge.

11. (Amended) Solar cell according to claim 8 wherein the window layer consists of a semiconductor material with a band gap which is at least as large as that of the absorber layer, and where the structure of the layers is polycrystalline or amorphous.

A' concluded

12. (Amended) Solar cell according to claim 8 wherein the absorber layer consists of $CuIn_xGa_yS_zSe_u$ with $x,y,z,u \geq 0$ and the window layer contains at least one material of the group of doped or undoped ZnO, InSnO (ITO), CdS and ZnSe.

13. (Amended) Solar cell according to claim 8 wherein the flexible solar cell structure, depending on application, contains a rigid supporting material like glass, metal or ceramic.